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Attest



US005494036A

**United States Patent** [19]**Uber, III et al.**[11] **Patent Number:** **5,494,036**[45] **Date of Patent:** **Feb. 27, 1996**[54] **PATIENT INFUSION SYSTEM FOR USE WITH MRI**[75] **Inventors:** **Arthur E. Uber, III, Pittsburgh; Seid Waddell, Sarver; John Stulen; Jon E. Manley, both of Pittsburgh, all of Pa.**[73] **Assignee:** **Medrad, Inc., Indianola, Pa.**[21] **Appl. No.:** **158,055**[22] **Filed:** **Nov. 26, 1993**[51] **Int. Cl.<sup>6</sup>** ..... **A61B 6/00**[52] **U.S. Cl.** ..... **128/655; 128/DIG. 1; 604/154; 604/131**[58] **Field of Search** ..... **128/653.2, 654, 128/655, DIG. 1, DIG. 12; 604/65-67, 27, 890.1, 131, 154, 134**[56] **References Cited****U.S. PATENT DOCUMENTS**

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**Primary Examiner**—William E. Kamm**Assistant Examiner**—Brian L. Casler[57] **ABSTRACT**

This invention relates generally to the field of Magnetic Resonance Imaging (MRI) systems for generating diagnostic images of a patient's internal organs and more particularly, this invention relates to improved MRI systems with decreased interference between the magnetic field used for producing diagnostic images and the magnetic fields generated by the electric motors used for driving the pistons of the contrast media injectors. Additionally, the system employs an improved communication link between an externally located system controller and the injection head control unit located within the electromagnetic isolation barrier which defines the magnetic imaging room.

**23 Claims, 2 Drawing Sheets**